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EXAMINER	
MCCLAIN-COLEMAN, TYNESHA L.	
ART UNIT	PAPER NUMBER
1789	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/579,166	VALDES EDWARDS, JUAN IGNACIO	
	Examiner	Art Unit	
	TYNESHA MCCLAIN-COLEMAN	1789	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 April 2011*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. The amendment filed April 26, 2011 is acknowledged. Claims 1-5 are pending in the application. Claim 6 has been cancelled.

Claim Rejections - 35 USC § 103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Berkowitz* in view of *Mitsuda, Mayr* as evidenced by *Day*, and *International Trade Centre*. *Day* is merely used to show the properties of the packaging material disclosed by *Mayr.*

5. With respect to claims 1-5, *Berkowitz* discloses a method of freezing meats which comprises initially freezing trimmed meat (column 2, lines 66-69; column 3, lines 68-69; and column 4, lines 14-15) rapidly within a limited amount of time, such as forty minutes (column 4, lines 34-37; and claim 5), leaving the interior of the meat only lightly frozen (step a) (column 2, lines 19-20). The meat is then rapidly packaged in an

envelope of shrinkable film material (step b) (column 2, lines 33-34). The packaging material is impervious to air, moisture, and external odors, and its shrinkage reduces the voids at the surface (step b) (claims 2 and 4) (column 2, lines 47-49). Also, *Berkowitz* teaches the packing material is exposed to a wide range of temperatures, endures sealing, and is resistant to physical stresses as claimed by the applicant (step b and claim 4) (column 3, lines 24-25, 39-41, and 48-51). The envelope of shrinkable film is evacuated to remove air and suitably sealed to hold the vacuum (step c) (column 2, lines 33-42). The packaging film is connected with a high-vacuum pump and the air is withdrawn from the bag (step c) (column 3, lines 18-20). This procedure is accomplished rapidly and the frozen condition of the meat has not changed to a material extent (column 3, lines 25-27). Thereafter the meat in the sealed package is subjected to a rapid deep freezing action, which preserves the meat (step d) (column 2, lines 52-55). The meat product may be stored and later prepared for consumption (step e and f) (column 1, lines 63-65).

6. However, *Berkowitz* does not disclose the temperature within the center of the meat is around -5°C after the initial freezing (step a) or around -18°C after the final freezing (step d). Also, *Berkowitz* does not disclose the meat products include fish.

7. *Mitsuda* discloses a method for producing frozen-food from a fresh food, such as fish, shellfish, or meat (column 1, lines 4-6). The fish is slaughtered (column 6, lines 43-60). The food is subjected to a quick chilling step by chilling the meat with a freezing medium of a temperature of -80°C to -100°C for a period of time, generally within the range of 7-10 minutes, so that the temperature of the center of the food becomes about

-5℃ (column 4, lines 10-14). Then, following the quick chilling, the temperature of the food environment is changed to -25℃ to -35℃ and maintained for a certain period of time, generally for 40 to 90 minutes, so that the food reaches the equilized temperature of -18℃ to -25℃ (column 4, lines 49-56). The frozen foods may be packaged in polyethylene bags (column 8, lines 9-12). *Mitsuda* also discloses it is known that, in the production of a frozen-food, the quality of the frozen-food product is greatly influenced by the rate of freezing as well as the freezing temperature, and that slower freezing results in larger ice crystals and thus in more detrimental changes in the food (column 1, lines 20-25). For this reason, it is advisable to use quick freezing wherein the temperature quickly passes through the maximum ice crystal formation temperature zone, which is generally between -1℃ and -5℃, to reach the desired temperature for freezing-preservation (column 1, lines 25-30).

8. Based upon the fact that *Berkowitz* and *Mitsuda* similarly teach rapidly freezing meat products in a multi stage process by lightly freezing the center of the meat product prior to the final freezing step, packaging the meat products, and preserving the initial, fresh qualities of the meat product prior to be frozen, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use fish meat as well as to substitute the initial freezing stage disclosed by *Berkowitz* with the step of quick chilling the food at a temperature of -80℃ to -100℃ as disclosed by *Mitsuda* with the expectation of successfully preparing a quickly chilled fish product with a center temperature of about -6℃ within 1.5 hours.

9. *Berkowitz* in view of *Mitsuda* does not disclose the center of the fish piece reaches around -18℃ within 2 hours including packaging time during the final freezing (step d). However, *Mitsuda* discloses the temperature of the food environment is changed to -25℃ to -35℃ and maintained for a certain period of time, generally for 40 to 90 minutes, so that the food reaches the equilized temperature of -18℃ to -25℃ (column 4, lines 49-56), and *Berkowitz* discloses the final freezing step completely and rapidly freezes the meat, and the intermediate procedure prior to the second stage of freezing is carried on quickly, preferably less than ten minutes (column 4, lines 68-71). Given that the method of freezing the fish meat as disclosed by *Mitsuda*, which is after the quick chilling step, is substantially similar to the final freezing stage of *Berkowitz*, it is clear that the fish meat which has undergone the process of quick chilling and final freezing as disclosed by *Berkowitz* in view of *Mitsuda* would intrinsically result in frozen fish meat with a temperature in the center of around -18℃ to about -25℃, absent any clear and convincing evidence to the contrary. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to optimize the center of the fish meat piece disclosed by *Berkowitz* in view of *Mitsuda* reaches around -18℃ within 2 hours including packaging time, as claimed by the applicant, with the expectation of successfully preparing a frozen fish product.

10. *Berkowtiz* in view of *Mitsuda* also does not disclose the vacuum process comprises a 99% vacuum (step c). Further, *Berkowitz* does not disclose the packaging film permeabilities to gases and water vapor as well as its temperature resistances (claim 3).

11. *Mayr* discloses that meat pieces of beef and pork were vacuum packaged individually in vacuum bagging film (polyamide-polyethylene [Packartis]) by evacuating the package (97 to 99% vacuum) (step c) and sealing (page 1, Packaging and Storage). The packaging material used is O_2-impermeable, and the transmission rates of O_2 and CO_2 in the film which are 10 and 35 cm^3 m^{-2} $24h^{-1}$ 10^5 Pa^{-1}, respectively (page 1, Packaging and Storage; and Discussion, 2nd paragraph) which is converted to 10 and 35 cm^3 m^{-2} $24h^{-1}$ bar. As evidenced by *Day*, high oxygen barrier materials with O_2 transmission rates of less than 15 cm^3 m^{-2} day^{-1} atm^{-1} are required when vacuum packaging chilled foods such as meats. Also, packaging materials with low water vapor transmission rates must be used. Typical vacuum packaging materials that have these features consist of coextruded or laminated films such as polyamide-polyethylene (PA/PE) (page 145, Vacuum Packaging (VP), section 6.4.2) (claim 3). PA/PE is consistent with the material taught by the prior art and the material disclosed by applicant. Therefore, it is expected that this material has similar low water vapor permeability, low nitrogen permeability, temperature resistance, and sealing temperatures as that recited in the instant claims. Applicant does not appear to process the PA/PE of the instant disclosure to further adjust or improve any characteristics thereof such as water vapor permeability, nitrogen permeability, temperature resistance, and sealing temperatures. *Mayr* teaches PA/PE that is used in the packing of meat products and it is expected to have similar low water permeability to the PA/PE used in the instant disclosure, absent any clear and convincing evidence to the contrary.

12. Based upon the fact that *Mayr* and *Berkowitz* in view of *Mitsuda* similarly teach vacuum packaging meat in an air and moisture impervious film, it would have been obvious, given the teachings of *Mayr*, to use the packaging film as well as to use the 97% to 99% vacuum in the process disclosed by *Berkowtiz* in view of *Mitsuda* with the expectation of successfully preparing a packaged frozen fish product.

13. Further, *Berkowitz* in view of *Mitsuda* and *Mayr* does not disclose the frozen packaged fish products are stored in resistant plastified cardboard boxes (step e).

14. *International Trade Centre* discloses paper and paperboard such as cartons are used in the packaging of frozen shrimp and fishery products for exports (page 16, Paper and paperboard). The frozen shrimp may be packed in a unit package and further placed in master cartons which may be polyethylene coated (page 22, 1st bullet).

15. Based upon the fact that *International Trade Centre* and *Berkowitz* in view of *Mitsuda* and *Mayr* similarly teach a packaged frozen fish products, it would have been obvious, given the teachings of *International Trade Centre*, to place the packaged fish product disclosed by *Berkowtiz* in view of *Matsuda* and *Mayr* into the cartons with the expectation of successfully storing a frozen fish product.

16. *Berkowitz* in view of *Mitsuda*, *Mayr*, and *International Trade Centre* is silent with respect to taking the frozen, packaged fish products out of the freezer and subjecting it to defrosting and the product is ready to be consumed in 1 to 3 days. However, *Berkowitz* in view of *Mitsuda, Mayr,* and *International Trade Centre* teaches the fish product is frozen and later prepared for consumption, and it is well known in the art to defrost frozen meats and fish and consume them within about 3 days in order to avoid

spoilage and decrease freshness of the product. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to defrost the frozen fish product disclosed by *Berkowitz* in view of *Mitsuda, Mayr,* and *International Trade Centre* and consume it within 1-3 as claimed by the applicant.

17. *Berkowitz* in view of *Mitsuda, Mayr,* and *International Trade Centre* is also silent with respect to performing steps a-d in a single facility (claim 5). Given that *Berkowitz* discloses the steps of initial freezing (step a), packaging (step b), vacuuming (step c), and final freezing (step d) are done rapidly and quickly (column 2, lines 33-34 and 52-56) and the meat may be frozen and packaged at a central location (column 5, lines 7-9), it would have been obvious to perform the method of freezing fish products as disclosed by *Berkowitz* in view of *Mitsuda, Mayr,* and *International Trade Centre* in one facility with the expectation of successfully preparing a frozen fish meat product.

18. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Mitsuda* in view of *Berkowitz, Mayr* as evidenced by *Day*, and *International Trade Centre*. *Day* is merely used to show the properties of the packaging material disclosed by *Mayr.*

19. Regarding claims 1-5, *Mitsuda* discloses yellowtails (fish) were slaughtered (cut), and then sprayed with a glazing solution while being rotated on stainless wires (column 6, lines 43-48). The glazing agent in the glazing solution comprising water is optional (column 2, line 67-column 3, line 7). Nitrogen gas of -100℃ was blown onto each fish for 8 minutes, and then the temperature of the atmosphere in the chilling box was

changed to -30°C and maintained at that level for 30 minutes so that each fish was gradually chilled (column 6, lines 48-56). Then, nitrogen gas of -100°C was blown onto each fish for 10 minutes so that the center became about -6°C (column 4, lines 10-14; and column 6, lines 56-60). The temperature of the gas blowing onto the fish was then changed to -32°C and maintained at that level for 90 minutes so that each fish was chilled to reach -25°C at its center (column 6, lines 60-63). The temperature of the center of the fish may also be frozen to about -18°C to -25°C, and then, the food is stored at a temperature of -18°C to -20°C until consumed (column 4, lines 49-56) *Mitsuda* also discloses packaging frozen fish in polyethylene bags (column 8, lines 9-12).

20. However, *Mitsuda* does not disclose vacuum packaging the fish prior to freezing the fish until the temperature of the center of the fish reaches about -18°C (steps b and c).

21. *Berkowitz* discloses a method of freezing meats which comprises initially freezing trimmed meat (column 2, lines 66-69; column 3, lines 68-69; and column 4, lines 14-15) rapidly within a limited amount of time, such as forty minutes (column 4, lines 34-37; and claim 5), leaving the interior of the meat only lightly frozen (column 2, lines 19-20). The meat is then rapidly packaged in an envelope of shrinkable film material (step b) (column 2, lines 33-34). The packaging material is impervious to air, moisture, and external odors, and its shrinkage reduces the voids at the surface (step b) (claims 2 and 4) (column 2, lines 47-49). Also, *Berkowitz* teaches the packing material is exposed to a wide range of temperatures, endures sealing, and is resistant to physical stresses as

claimed by the applicant (step b and claim 4) (column 3, lines 24-25, 39-41, and 48-51). The envelope of shrinkable film is evacuated to remove air and suitably sealed to hold the vacuum (step c) (column 2, lines 33-42). The packaging film is connected with a high-vacuum pump and the air is withdrawn from the bag (step c) (column 3, lines 18-20). This procedure is accomplished rapidly and the frozen condition of the meat has not changed to a material extent (column 3, lines 25-27). Thereafter the meat in the sealed package is subjected to a rapid deep freezing action, which preserves the meat (step d) (column 2, lines 52-55). The meat product may be stored and later prepared for consumption (column 1, lines 63-65).

22. While *Mitsuda* discloses packaging the fish after it is frozen to have a center temperature of about -18°C to about -25°C, the point in time in which the fish is packaged during the process of *Mitsuda* is not seen as critical. To switch the order of performing process steps, i.e. the order of the addition of the ingredients into the final mixture, would be obvious absent any clear and convincing evidence and/or arguments to the contrary (MPEP 2144.04 [R-1]). "Selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results." Based upon the fact that *Mitsuda* and *Berkowitz* similarly teach rapidly freezing meat products in a multi stage process by lightly freezing the center of the meat product prior to the final freezing step, packaging the meat products, and preserving the initial, fresh qualities of the meat product prior to be frozen, it would have been obvious, given the teachings of *Berkowitz*, to vacuum package the fish disclosed by *Mitsuda* in the air and moisture impervious packaging prior to freezing the fish until the temperature of the center of the

fish reaches about -18°C with the expectation of successfully preparing a functional product.

23. *Mitsuda* in view of *Berkowitz* does not disclose the center of the fish piece reaches around -18°C within 2 hours including packaging time during the final freezing (step d). However, *Mitsuda* discloses the temperature of the food environment is changed to -25°C to -35°C and maintained for a certain period of time, generally for 40 to 90 minutes, so that the food reaches the equilized temperature of -18°C to -25°C (column 4, lines 49-56), and *Berkowitz* discloses the final freezing step completely and rapidly freezes the meat, and the intermediate procedure prior to the second stage of freezing is carried on quickly, preferably less than ten minutes (column 4, lines 68-71). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to optimize the center of the fish meat piece disclosed by *Mitsuda* in view of *Berkowitz* reaches around -18°C within 2 hours including packaging time, as claimed by the applicant, with the expectation of successfully preparing a frozen fish product.

24. *Mitsuda* in view of *Berkowitz* also does not disclose the vacuum process comprises a 99% vacuum (step c). Further, *Mitsuda* in view of *Berkowitz* does not disclose the packaging film permeabilities to gases and water vapor as well as its temperature resistances (claim 3).

25. *Mayr* discloses that meat pieces of beef and pork were vacuum packaged individually in vacuum bagging film (polyamide-polyethylene [Packartis]) by evacuating the package (97 to 99% vacuum) (step c) and sealing (page 1, Packaging and Storage).

The packaging material used is O_2-impermeable, and the transmission rates of O_2 and CO_2 in the film which are 10 and 35 cm^3 m^{-2} $24h^{-1}$ 10^5 Pa^{-1}, respectively (page 1, Packaging and Storage; and Discussion, 2nd paragraph) which is converted to 10 and 35 cm^3 m^{-2} $24h^{-1}$ bar. As evidenced by *Day*, high oxygen barrier materials with O_2 transmission rates of less than 15 cm^3 m^{-2} day^{-1} atm^{-1} are required when vacuum packaging chilled foods such as meats. Also, packaging materials with low water vapor transmission rates must be used. Typical vacuum packaging materials that have these features consist of coextruded or laminated films such as polyamide-polyethylene (PA/PE) (page 145, Vacuum Packaging (VP), section 6.4.2) (claim 3). PA/PE is consistent with the material taught by the prior art and the material disclosed by applicant. Therefore, it is expected that this material has similar low water vapor permeability, low nitrogen permeability, temperature resistance, and sealing temperatures as that recited in the instant claims. Applicant does not appear to process the PA/PE of the instant disclosure to further adjust or improve any characteristics thereof such as water vapor permeability, nitrogen permeability, temperature resistance, and sealing temperatures. *Mayr* teaches PA/PE that is used in the packing of meat products and it is expected to have similar low water permeability to the PA/PE used in the instant disclosure, absent any clear and convincing evidence to the contrary.

26. Based upon the fact that *Mayr* and *Mitsuda* in view of *Berkowitz* similarly teach vacuum packaging meat in an air and moisture impervious film, it would have been obvious, given the teachings of *Mayr*, to use the packaging film as well as to use the

97% to 99% vacuum in the process disclosed by *Mitsuda* in view of *Berkowitz* with the expectation of successfully preparing a packaged frozen fish product.

27. Further, *Mitsuda* in view of *Berkowitz* and *Mayr* does not disclose the frozen packaged fish products are stored in resistant plastified cardboard boxes (step e).

28. *International Trade Centre* discloses paper and paperboard such as cartons are used in the packaging of frozen shrimp and fishery products for exports (page 16, Paper and paperboard). The frozen shrimp may be packed in a unit package and further placed in master cartons which may be polyethylene coated (page 22, 1st bullet).

29. Based upon the fact that *International Trade Centre* and *Mitsuda* in view of *Berkowitz* and *Mayr* similarly teach a packaged frozen fish products, it would have been obvious, given the teachings of *International Trade Centre*, to place the packaged fish product disclosed by *Mitsuda* in view of *Berkowitz* and *Mayr* into the cartons with the expectation of successfully storing a frozen fish product.

30. *Mitsuda* in view of *Berkowitz*, *Mayr*, and *International Trade Centre* is silent with respect to taking the frozen, packaged fish products out of the freezer and subjecting it to defrosting and the product is ready to be consumed in 1 to 3 days. However, *Mitsuda* in view of *Berkowitz, Mayr,* and *International Trade Centre* teaches the fish product is frozen and later prepared for consumption, and it is well known in the art to defrost frozen meats and fish and consume them within about 3 days in order to avoid spoilage and decrease freshness of the product. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to defrost the

frozen fish product disclosed by *Mitsuda* in view of *Berkowitz, Mayr,* and *International Trade Centre* and consume it within 1-3 as claimed by the applicant.

31. *Mitsuda* in view of *Berkowitz, Mayr,* and *International Trade Centre* is also silent with respect to performing steps a-d in a single facility (claim 5). Given that *Berkowitz* discloses the steps of initial freezing (step a), packaging (step b), vacuuming (step c), and final freezing (step d) are done rapidly and quickly (column 2, lines 33-34 and 52-56) and the meat may be frozen and packaged at a central location (column 5, lines 7-9), it would have been obvious to perform the method of freezing fish products as disclosed by *Mitsuda* in view of *Berkowitz, Mayr,* and *International Trade Centre* in one facility with the expectation of successfully preparing a frozen fish meat product.

32. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Zinck* in view of *Mitsuda, Mayr* as evidenced by *Day*, and *International Trade Centre*. *Day* is merely used to show the properties of the packaging material disclosed by *Mayr.*

33. With respect to claims 1-5, *Zinck* discloses cutting fresh, raw fish meat before freezing it (page 1, lines 11-15; page 3, lines 9-12). The fish meat is frozen in a freezer to a temperature of about 2°C at a temperature of about -30°C in less than an hour (page 3, lines 20-26). The fish meat is then packaged in a container, vacuum sealed, and then frozen using a freezer to a temperature of about -30°C (page 3, line 13-page 4, line 4). The packaging material is a flexible waterproof container type bag made of a heat sealable material approved for food contact and can withstand freezing and

cooking in boiling water and steam (page 4, lines 5-9). The packaged, frozen fish meat may be stored at about -22°C (page 4, lines 1-4).

34. However, *Zinck* does not disclose freezing the fish meat until the center reaches a temperature of around -5°C after the initial freezing (step a) or around -18°C after the final freezing (step d).

35. *Mitsuda* discloses a method for producing frozen-food from a fresh food, such as fish, shellfish, or meat (column 1, lines 4-6). The fish is slaughtered (column 6, lines 43-60). The food is subjected to a quick chilling step by chilling the meat with a freezing medium of a temperature of -80°C to -100°C for a period of time, generally within the range of 7-10 minutes, so that the temperature of the center of the food becomes about -5°C (column 4, lines 10-14). Then, following the quick chilling, the temperature of the food environment is changed to -25°C to -35°C and maintained for a certain period of time, generally for 40 to 90 minutes, so that the food reaches the equilized temperature of -18°C to -25°C (column 4, lines 49-56). The frozen foods may be packaged in polyethylene bags (column 8, lines 9-12). *Mitsuda* also discloses it is known that, in the production of a frozen-food, the quality of the frozen-food product is greatly influenced by the rate of freezing as well as the freezing temperature, and that slower freezing results in larger ice crystals and thus in more detrimental changes in the food (column 1, lines 20-25). For this reason, it is advisable to use quick freezing wherein the temperature quickly passes through the maximum ice crystal formation temperature zone, which is generally between -1°C and -5°C, to reach the desired temperature for freezing-preservation (column 1, lines 25-30).

36. Based upon the fact that *Zinck* and *Mitsuda* similarly teach rapidly freezing fish products in a multi stage process by lightly freezing the fish product prior to the final freezing step as well as packaging the meat products, it would have been obvious, given the teachings of *Mitsuda*, to freeze the fish meat disclosed by *Zinck* in order for the center of the fish to have a temperature of about -5°C within 1.5 hours during the initial freezing as well as a center temperature of about -18°C during the final freezing, as claimed by the applicant, with the expectation of successfully preparing a functional product.

37. *Zinck* in view of *Mitsuda* does not disclose the center of the fish piece reaches around -18°C within 2 hours including packaging time during the final freezing (step d). However, *Mitsuda* discloses the temperature of the food environment is changed to -25°C to -35°C and maintained for a certain period of time, generally for 40 to 90 minutes, so that the food reaches the equilized temperature of -18°C to -25°C (column 4, lines 49-56), and it is well understood to quickly package frozen fish meat in order to avoid premature warming/thawing of the frozen food which leads to undesirable features and properties of the final food product. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to optimize the center of the fish meat piece disclosed by *Zinck* in view of *Mitsuda* reaches around -18°C within 2 hours including packaging time, as claimed by the applicant, with the expectation of successfully preparing a frozen fish product.

38. *Zinck* in view of *Mitsuda* also does not disclose the vacuum process comprises a 99% vacuum (step c). Further, *Zinck* does not disclose the packaging film

permeabilities to gases and water vapor as well as its temperature resistances (claims 2- 4).

39. *Mayr* discloses that meat pieces of beef and pork were vacuum packaged individually in vacuum bagging film (polyamide-polyethylene [Packartis]) by evacuating the package (97 to 99% vacuum) (step c) and sealing (page 1, Packaging and Storage). The packaging material used is O_2-impermeable, and the transmission rates of O_2 and CO_2 in the film which are 10 and 35 cm^3 m^{-2} $24h^{-1}$ 10^5 Pa^{-1}, respectively (page 1, Packaging and Storage; and Discussion, 2nd paragraph) which is converted to 10 and 35 cm^3 m^{-2} $24h^{-1}$ bar. As evidenced by *Day*, high oxygen barrier materials with O_2 transmission rates of less than 15 cm^3 m^{-2} day^{-1} atm^{-1} are required when vacuum packaging chilled foods such as meats. Also, packaging materials with low water vapor transmission rates must be used. Typical vacuum packaging materials that have these features consist of coextruded or laminated films such as polyamide-polyethylene (PA/PE) (page 145, Vacuum Packaging (VP), section 6.4.2) (claim 3). PA/PE is consistent with the material taught by the prior art and the material disclosed by applicant. Therefore, it is expected that this material has similar low water vapor permeability, low nitrogen permeability, temperature resistance, and sealing temperatures as that recited in the instant claims. Applicant does not appear to process the PA/PE of the instant disclosure to further adjust or improve any characteristics thereof such as water vapor permeability, nitrogen permeability, temperature resistance, and sealing temperatures. *Mayr* teaches PA/PE that is used in the packing of meat

products and it is expected to have similar low water permeability to the PA/PE used in the instant disclosure, absent any clear and convincing evidence to the contrary.

40. Based upon the fact that *Mayr* and *Zinck* in view of *Mitsuda* similarly teach vacuum packaging meat in a waterproof material, it would have been obvious, given the teachings of *Mayr*, to use the packaging film as well as to use the 97% to 99% vacuum in the process disclosed by *Zinck* in view of *Mitsuda* with the expectation of successfully preparing a packaged frozen fish product.

41. Further, *Zinck* in view of *Mitsuda* and *Mayr* does not disclose the frozen packaged fish products are stored in resistant plastified cardboard boxes (step e).

42. *International Trade Centre* discloses paper and paperboard such as cartons are used in the packaging of frozen shrimp and fishery products for exports (page 16, Paper and paperboard). The frozen shrimp may be packed in a unit package and further placed in master cartons which may be polyethylene coated (page 22, 1st bullet).

43. Based upon the fact that *International Trade Centre* and *Zinck* in view of *Mitsuda* and *Mayr* similarly teach a packaged frozen fish products, it would have been obvious, given the teachings of *International Trade Centre*, to place the packaged fish product disclosed by *Zinck* in view of *Matsuda* and *Mayr* into the cartons with the expectation of successfully storing a frozen fish product.

44. *Zinck* in view of *Mitsuda*, *Mayr*, and *International Trade Centre* is silent with respect to taking the frozen, packaged fish products out of the freezer and subjecting it to defrosting and the product is ready to be consumed in 1 to 3 days. However, *Zinck* in view of *Mitsuda, Mayr,* and *International Trade Centre* teaches the fish product is frozen

and later prepared for consumption, and it is well known in the art to defrost frozen meats and fish and consume them within about 3 days in order to avoid spoilage and decrease freshness of the product. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to defrost the frozen fish product disclosed by *Zinck* in view of *Mitsuda, Mayr,* and *International Trade Centre* and consume it within 1-3 as claimed by the applicant.

45. *Zinck* in view of *Mitsuda, Mayr,* and *International Trade Centre* is also silent with respect to performing steps a-d in a single facility (claim 5). Given that *Zinck* teaches the steps of initial freezing (step a), packaging (step b), vacuuming (step c), and final freezing (step d) are done quickly in order to avoid premature thawing, it would have been obvious to perform the method of freezing fish products as disclosed by *Zink* in view of *Mitsuda, Mayr,* and *International Trade Centre* in one facility with the expectation of successfully preparing a frozen fish meat product.

Response to Arguments

46. Applicant's arguments filed April 26, 2011 have been fully considered.

47. Due to the amendments to claims 1-5, all 35 U.S.C. 112 claim rejections have been withdrawn (see page 5).

48. Applicant's arguments with respect to the rejection of claims 1-6 over *Berkowitz* in view of *Mayr*, as evidenced by *Day,* and *International Trade Centre* have been considered, but they are not persuasive.

49. Applicant argues *Berkowitz* does not disclose cutting the fish meat and once the meat is cut quickly subjecting the cut meat to a quick freeze process to freeze the meat to a particular temperature. However, *Berkowitz* discloses the meat may be ground to a desired texture and formed into patties (column 2, lines 56-65) or trimmed prior to the initial freezing step (column 3, lines 68-70; and column 4, lines 14-17). Thus, *Berkowitz* successfully teaches the limitation of cutting the meat and quickly subjecting the meat to a quick freeze process. *Berkowitz* does not disclose using the 2 step freezing process on fish meat, however, *Berkowitz* teaches other types of meat may be used (column 4, lines 14-17). *Matsuda* is relied upon for the teachings of using fish, performing a chilling step at temperatures of -80°C to -100°C to produce a chilled fish product with an interior temperature of about -6°C within 7-10 minutes, and a freezing step at temperatures of -25°C to -35°C, which is similar to the temperatures of the final freezing step as disclosed by *Berkowitz*, to produce a frozen fish product with interior temperatures of about -18°C to -25°C within 40-90 minutes (column 4, lines 5-56).

50. Based upon the fact that *Berkowitz* and *Mitsuda* similarly teach rapidly freezing meat products in a multi stage process by lightly freezing the center of the meat product prior to the final freezing step, packaging the meat products, and preserving the initial, fresh qualities of the meat product prior to be frozen, it would have been obvious to use fish meat as well as to substitute the initial freezing stage disclosed by *Berkowitz* with the step of quick chilling the food at a temperature of -80°C to -100°C as disclosed by *Mitsuda* with the expectation of successfully preparing a quickly chilled fish product with a center temperature of about -6°C within 1.5 hours. Also, it would have been obvious

to optimize the center of the fish meat piece disclosed by *Berkowitz* in view of *Mitsuda* reaches around -18°C within 2 hours including packaging time, as claimed by the applicant, with the expectation of successfully preparing a frozen fish product. Even though *Berkowitz* in view of *Mitsuda* discloses the fish is exposed to temperatures of -80°C to -100°C in the initial freezing step and -20°F to -40°F, *Berkowitz* in view of *Mitsuda* still teach the center of the fish reaches temperatures of about -6°C as well as -18°C to -25°C, which overlaps the ranges claimed by the applicant.

51. Due to the amendment to claim 1 to include the limitation of preserving fish meat which was not previously considered in independent claim 1, a new ground(s) of rejection of claims 1-5 over *Mitsuda* in view of *Berkowitz, Mayr*, as evidenced by *Day,* and *International Trade Centre* as well as claims 1-5 over *Zinck* in view of *Mitsuda, Mayr* as evidenced by *Day*, and *International Trade Centre* have been made upon further search and consideration.

52. It is noted that the newly added limitation “quickly” is a relative term and is not defined by the specification or the claims. It is not clearly indicated at what point in time the meat should be subjected to an initial quick freeze process or the amount of time that may lapse in between the cutting and initial quick freezing steps.

53. While the initial quick freezing step as claimed by the applicant does not include a freezing medium, the invention as presently claimed may include a freezing medium as well as other elements/steps since they are not excluded from the claims. The transitional term “comprising,” which is synonymous with “including,” “containing,” or “characterized by,” is inclusive or open-ended and does not exclude additional,

unrecited elements or method steps. See MPEP 2111.03. Further, it is well known in the art that quick freezing is a process for preserving foods by freezing foods so rapidly that ice crystals formed are too small to rupture the cells and the natural juices and flavor are preserved, and quick freezing may be preformed by methods such as placing the food in freezers, blasting the food with cold air, and immersing the food in a freezing medium. Since no definition of the "quick freezing process" as claimed by the applicant has been provided in the instant specification, the “quick freezing process” as presently claimed is interpreted to include the use of freezers, blasts of cold air, and immersion in freezing medium. The words of the claim must be given their plain meaning unless the plain meaning is inconsistent with the specification, and any special meaning assigned to a term must be sufficiently clear in the specification that any departure from common usage would be so understood by a person of experience in the field of the invention. See MPEP 2106 and 2111.01.

54. *Mitsuda* additionally teaches a restricted amount of time to perform the IQC as well as controlling the freezing step to a certain temperature in the center of the meat product. As disclosed by *Mitsuda*, a step of quick chilling (IQC) is done in the range of 7 minutes to 10 minutes so that the temperature of the center of the food becomes about - 6 ℃ or lower, which falls within the time and temperature ranges claimed by the applicant (letter b) (column 4, lines 10-14). *Mitsuda* also teaches the food can be frozen, through the step of quick chilling, in such a manner that it is passed through the maximum ice crystal formation temperature zone while having as much as possible the free water and bound water in the spaces unfrozen. Such detrimental effects as

mechanical damage or cell rupture can be prevented (column 4, lines 20-26). While *Mitsuda* discloses a 4-step sequential freezing process in example 2, the center of the fish reaches a temperature of about -6℃ within about 48 minutes during the first 3 steps of *Mitsuda*, which falls within the applicant's claimed temperature range of about -5℃ and time range of less than 1.5 hours. Further, the temperature of the food environment is changed to – 25 ℃ to – 35 ℃ (4^{th} step) and maintained at that temperature for 40 to 90 minutes, so that the food reaches the equalized temperature of – 18 ℃ to – 25 ℃, which falls within applicant's claimed temperature range and time range.

Conclusion

55. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

56. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

57. Any inquiry concerning this communication or earlier communications from the examiner should be directed to TYNESHA MCCLAIN-COLEMAN whose telephone number is (571)270-1153. The examiner can normally be reached on Monday - Thursday 7:30AM - 5:00PM Eastern Time.

58. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Humera Sheikh can be reached on (571)272-0604. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

59. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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